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NASA Procedural Requirements

COMPLIANCE IS MANDATORY**NPR 7150.2**Effective Date: September 27,
2004Expiration Date: September
27, 2009[Printable Format \(PDF\)](#)

Subject: NASA Software Engineering Requirements

Responsible Office: Office of the Chief Engineer[| TOC](#) | [Preface](#) | [Chapter1](#) | [Chapter2](#) | [Chapter3](#) | [Chapter4](#) | [Chapter5](#) | [Chapter6](#) | [AppendixA](#)
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CHAPTER 6: Tailoring, Warrant Authority, and Compliance Measurement

This NPR provides software engineering requirements to be applied throughout NASA and its contractor community. To accommodate the wide variety of software systems and subsystems, application of these requirements to specific projects will be evaluated and implemented for each project, with alternate acceptable requirements being applied where justified and approved. To effectively and independently maintain control over the application of requirements in this NPR and to ensure proposed variants from specific requirements are appropriately mitigated, the Office of the Chief Engineer has established a "Warrant Authority" within NASA's Independent Technical Authority (ITA). Variants from requirements in this NPR are governed by the following requirements.

6.1 Tailoring of Requirements

NASA Centers are expected to establish rigorous software engineering practices for software developed or acquired by projects managed at those Centers. In cases where these Center practices are formal, enforced, and meet or exceed the requirements of this NPR, the requirements allocated to "projects" in this NPR and the data items in Chapter 5 can be replaced by designated Center-level requirements approved by the authorized Center ITA Manager.

6.1.1 For those cases in which a Center, project, or program desires to apply specific or general practices that do not meet or exceed the requirements of this NPR, the Center shall recommend those alternate requirements for Agency Technical Authority approval with appropriate justification and Center ITA Manager concurrence. [SWE-120]

6.1.2 Where approved, the Center shall document the approved alternate requirement in the procedure controlling the development, acquisition, and/ or deployment of the affected software. [SWE-121]

6.2 Expertise of ITA Warrant Authority(s)

6.2.1 The designated ITA Warrant Authorities for this NPR for non- business and non-IT infrastructure systems shall be approved by the NASA Chief Engineer, in coordination with the NASA Chief Safety and Mission Assurance Officer. [SWE-122]

Note: The designated ITA Warrant Authorities for this NPR should be recognized NASA software engineering experts.

6.2.2 The designated ITA Warrant Authorities for this NPR for business and IT-infrastructure systems shall be approved by the NASA Chief Information Officer. [SWE-123]

6.3 Compliance

6.3.1 The designated ITA Warrant Authority for this NPR shall comply with Office of the Chief Engineer's direction for NASA Independent Technical Authority. [SWE-124]

6.3.2 Each project with software components shall maintain a compliance matrix against requirements in this NPR including those delegated to other parties or accomplished by contract vehicles. [SWE-125]

6.3.3 The designated ITA Warrant Authority for this NPR shall consider the following information when assessing waivers and variants from requirements in this NPR: [SWE-126]

- a. The list of Agency projects containing software.
- b. The classification of systems and subsystems containing software as defined in Appendix B.
- c. Applicable Center-level software directives that meet the intent of this NPR.
- d. Applicable contractor and subcontractor software policies and procedures that meet the intent of this NPR.
- e. Potential impacts to NASA missions.

6.3.4 The designated ITA Warrant Authority for this NPR shall review and have concurrence approval for Center defined subsets of requirements denoted by "P(Center)" in the Requirements Mapping Matrix in Appendix D for the indicated Classes of software. [SWE-127]

6.3.5 The designated ITA Warrant Authority shall keep records of projects and organizational compliances, waivers, variants, and exceptions against this NPR; and submit an annual report to the Office of Chief Engineer, Office of Safety and Mission Assurance, and the Chief Information Officer. [SWE-128]

6.3.6 The Office of the Chief Engineer shall authorize appraisals against selected requirements in this NPR (or ITA approved alternative set of designated Center requirements) to check compliance. [SWE-129]

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